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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,251	04/27/2001	Richard H. Morrison JR.	NU-541XX	8919
207	7590	11/01/2005	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP			ROJAS, BERNARD	
TEN POST OFFICE SQUARE			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	
			2832	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/844,251	Applicant(s) MORRISON ET AL.	
	Examiner Bernard Rojas	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/22/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 12-15, 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 07/21/2005 have been fully considered but they are not persuasive. Applicant contends that Streeter et al. [US 6,396,371] fails to discuss a lowered contact resistance. Claim 1 merely states the fluid acts with the contact material to lower the contact resistance. Streeter et al. discloses a Mem switch that uses a liquid metal or mercury contacts to obtain their benefits [col. 9 lines 4-55]. The benefits of using liquid metal contacts are well known in the art to be a lower contact resistance at the contact and reduced contact wear [see Dove et al. US 6,689,976 col. 2 lines 21-40].

Claim 4 merely recites a material that can be used to create the contact. Kasai et al. [US 6,483,395] discloses the use of and provides a motivation for using ruthenium contacts to reduce the adhesive force of the contact electrode down to such a degree that the adhesive force does not harmfully influence an operational characteristic of the micro-machine switch [col. 5 lines 13-16, col. 7 lines 25-33].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3, 5 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Streeter et al. [US 6,396,371].

Claim 1, as best understood, Streeter et al. discloses a process for preparing a contact on a microswitch, the process reducing a resistance of the microswitch and maintaining a low resistance of the microswitch for many cycles, comprising

- a. forming the microswitch contact [126, 128] with a predetermined material [gold (Au), col. 9 line 38];

- b. exposing the microswitch contact for a set period of time [during switch operation] to a fluid [the mercury on contacts 126, 128 is heated to a liquid state during switch operation] being reactive with the contact material to lower a contact resistance [col. 9 lines 45-65, using a liquid metal contact is well known in the art to have the benefit of lowering the contact resistance, see Dove et al. US 6,689,976 col. 2 lines 21-40].

Claim 2, Streeter et al. discloses the process of claim 1 wherein the microswitch is a micro relay [Mems relay, abs, figure 4].

Claim 3, Streeter et al. discloses the process of claim 1 wherein the contacts are made of gold [col. 9 line 38].

Claim 5, the process of fabricating the microswitch is inherent in the product structure as previously describe for claim 1.

Claim 16, Streeter et al. discloses a microswitch contact formed according to the process of claim 1 [contacts 126, 128].

Claims 17 and 19, Streeter et al. discloses a microswitch formed according to the process of claim 1 [figure 4].

Claim 18, Streeter et al. discloses a microswitch formed according to the process of claim 5 [figure 4].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Streeter et al. [US 6,396,371] in view of Kasai et al. [US 6,483,395].

Claim 4, Streeter et al. discloses the process of claim 3 with the exception of making the contact out of ruthenium.

Kasai et al teaches using ruthenium contacts in a Mem switch.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use ruthenium contacts in the microswitch of Streeter et al. in order to reduce the adhesive force of the contact electrode down to such a degree that the adhesive force does not harmfully influence an operational characteristic of the micro-machine switch [col. 5 lines 13-16, col. 7 lines 25-33].

Allowable Subject Matter

Claims 12-15 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bernard Ryzin
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10/27/05